

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 October 2003 (09.10.2003)

PCT

(10) International Publication Number
WO 2003/082255 A3

(51) International Patent Classification⁷: **A61K 31/00**,
A61P 29/02, A61K 38/00

Chuanzheng [CN/US]; 87 Reinman Road, Warren, NJ
07059 (US); **WEILER, Jan** [DE/DE]; Binzener Strasse
5b, 79539 Loerrach (DE); **WISHART, William** [US/CH];
LeonardNeuweilerstrasse 16, CH-4123 Allschwil (CH).

(21) International Application Number:
PCT/EP2003/003469

(74) Agent: **GROS, Florent**; Novartis AG, Corporate Intellec-
tual Property, Patent & Trademark Department, CH-4002
Basel (CH).

(22) International Filing Date: 2 April 2003 (02.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/369,893 3 April 2002 (03.04.2002) US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LT, LU, LV, MA, MD, MK, MN, MX, NO, NZ, OM, PH,
PL, PT, RO, RU, SC, SE, SG, SK, TJ, TM, TN, TR, TT,
UA, US, UZ, VC, VN, YU, ZA, ZW.

(71) Applicant (*for all designated States except AT, US*): **NO-
VARTIS AG** [CH/CH]; Lichtstrasse 35, CH-4056 Basel
(CH).

(84) Designated States (*regional*): Eurasian patent (AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(71) Applicant (*for AT only*): **NOVARTIS PHARMA GMBH**
[AT/AT]; Brunner Strasse 59, 1230 Vienna (AT).

Published:
— with international search report

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BARCLAY, Jane**
[GB/GB]; Novartis Institute for Medical Sciences, 5 Gower
Place, London WC1E 6BN (GB); **BUXTON, Francis,**
Paul [GB/US]; 6 Applewood Lane, Morristown, NJ 07960
(US); **GANJU, Pamposh** [GB/GB]; Novartis Institute
for Medical Sciences, 5 Gower Place, London WC1E
6BS (GB); **NATT, Francois, Jean-Charles** [FR/CH];
Traugott Meyer-Strasse 5, CH-4147 Aesch (CH); **SONG,**

(88) Date of publication of the international search report:
5 February 2004

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: USE OF MOB-5 IN PAIN

(57) Abstract: The invention discloses Mob-5 as a suitable target for the development of new therapeutics to treat or ameliorate chronic pain. The invention relates to methods to treat and/or ameliorate chronic pain and pharmaceutical compositions therefor comprising modulators with inhibitory or stimulatory effect on Mob-5 activity and/or Mob-5 gene expression. The invention also relates to a method to identify compounds with therapeutic usefulness to treat chronic pain, comprising identifying compounds that can inhibit or stimulate Mob-5 activity and/or gene expression which can also reverse the pathological effects of chronic pain in vivo.

WO 2003/082255 A3

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/03469

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K31/00 A61P29/02 A61K38/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01 55170 A (LIANG PENG ;UNIV VANDERBILT (US)) 2 August 2001 (2001-08-02) abstract; claims ---	12-14, 18,20-23
E	WO 03 029 264 A (MACDONALD TIMOTHY L ;LINDEN JOEL M (US); UNIV VIRGINIA (US); RIEGE) 10 April 2003 (2003-04-10) abstract; claims 30,31 page 26, line 25-28 page 14, line 25-29 page 12, line 10-26 ---	12-14, 18,20-23
A	ZHANG R ET AL: "RATTUS NORVEGICUS SECRETED PROTEIN MOB-5 (MOB-5) MRNA, COMPLETE CDS" MPSRCH GENBANK, XP002940599 the whole document --- -/-	1-25

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

1 August 2003

Date of mailing of the international search report

16. 10. 03

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Herrera, S

INTERNATIONAL SEARCH REPORT

Inter. Application No

PCT/EP 03/03469

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>ZHANG R ET AL: "SECRETED PROTEIN MOB-5" MPSRCH GENBANK, XP002940600 the whole document</p> <p>-----</p>	1-25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/03469

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
5-8, 13, 14-25 (fully), 1-4, 9-12 (partly)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claims 17 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box I.1

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

Continuation of Box I.2

Present claims relate to a product and compound defined by reference to a desirable characteristic or property, namely the ability to modulate MOB-5.

The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the exemplified oligonukleotides as well as mode of action it self.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 5-8,13,14-25 (fully); 1-4,9-12 (partly)

Use of inhibitors of MOB-5 activity or gene expression for the treatment of pain; methods of diagnosing MOB-5 dependent pain; Vectors encoding for MOB-5 and antibodies for MOB-5

2. Claims: 1-4,9-12 (partly)

Use of compounds which stimulates MOB-5 activity or gene expression in the treatment of chronic pain

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/03469

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0155170	A	02-08-2001	AU	3119201 A	07-08-2001
			EP	1254155 A	06-11-2002
<hr/>					
WO 03029264	A	10-04-2003	NONE		
<hr/>					